

The First Record of *Platycerium ridleyi* in Sumatera

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Platycerium ridleyi Christ, one of the well-known staghorn ferns, was thought to be restricted to a few localities in Malaya, Singapore, northeastern Borneo, and the Lingga Archipelago. It was not known to occur on Sumatera (formerly Sumatra). In general, this species is regarded as rare (Ridley, 1926, p. 110); few collections have been made during the last 20 years, and according to Holttum (pers. comm.), this species must be regarded as extinct in Singapore.

During some field trips in Jambi Province, Central Sumatera, in 1980, the authors visited two places where *P. ridleyi* appeared to be rather common. One locality is the Nature Reserve of Berbak along the river Air Hitam Laut ($\pm 1^{\circ}25'S$, $104^{\circ}30'E$) about 15–25 km upstream from the east coast. The second locality is in the center of the island near Pasir Mayang, close to the head of the Batang Hari River ($\pm 1^{\circ}0'S$, $102^{\circ}0'E$), in a timber concession to P.T.I.F.A. (Asiatic Forest Industry, Ltd.), where the species may become extinct. These two places are rather far from each other, but fit well in the previously known distribution pattern.

Platycerium coronarium (König ex Müller) Desv., the sister species of *P. ridleyi*, can be found in both *P. ridleyi* localities. The latter is a common and widely distributed species in the ever-wet lowlands of Malaya and the Greater Sunda Islands. Although the two species are closely related, they can be distinguished easily by their different habits. *Platycerium ridleyi* has erect foliage fronds, an oval soral lobe, and entire base fronds (with very prominent veins) forming a large bulb. *Platycerium coronarium* has elongate, pendulous foliage fronds, a kidney-shaped soral lobe, and lobed base fronds forming a basket. There is another striking difference between the two species: *P. ridleyi* grows solitarily, but with many specimens in one tree (at least 10, mostly 15), whereas *P. coronarium* is present in one or two clusters, which are formed by vegetative reproduction.

Ridley (1908, p. 56), who was the first author to distinguish *P. ridleyi* (as *P. biforme* var. *erectum*), mentioned its occurrence on lofty branches of trees like *Shorea*, at least 30 m above the ground. He never saw *P. ridleyi* and *P. coronarium* growing on the same tree. Furthermore, he cited Motley for specimens from Borneo, which were growing on the highest branches of trees in very exposed places. Holttum (1954, p. 140) remarked that *P. ridleyi* grows on tall trees, but sometimes also on low branches along rivers. It never grows in open country like *P. coronarium*. Corner (1978, p. 162) noted *P. ridleyi* to be frequent on high branches in swamp forests.

Our own observations more or less agree with the above findings. In the Berbak Nature Reserve, *P. ridleyi* occurred along the rivers and smaller streams in the swamp forest and grew exposed to the sun in the crowns of high emergent *Shorea* trees from the first trunk fork upwards. *Platycerium coronarium*, on the other hand,

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occurred distinctly lower in the trees, always in a more shady situation, and apparently was less frequent than *P. riddleyi*. However, we may have overlooked stands of *P. coronarium* because of their less exposed habitat. As seen from the river, the branches of emergents and their load of *P. riddleyi* stand out much more clearly.

Where the *Pandanus* zone starts, *P. riddleyi* seems to be more common than *P. coronarium*. Closer to the coast in the *Nipa* zone, the former is absent, whereas the latter can still be found. Also, outside the reserve near the coast, in open country and anthropogenic situations, only *P. coronarium* was seen.

Pasir Mayang, although drier than Berbak and forming a mosaic of swampy and well-drained places, also produced several localities where *P. riddleyi* and *P. coronarium* grew in profusion. But near Muara Bulian, a much drier, non-swampy area, both staghorn ferns were absent. This could indicate that at least *P. riddleyi* prefers—or may be even entirely restricted to—swamp forest, as Corner indicated.

Growing high up in the trees, *P. riddleyi* can be rather easily seen from a logging road or river. From inside the primary forest, detection is much more difficult. However, when dead, the mass of base fronds falls down intact. Finding these on the forest floor indicates that there is (or was) a tree with *P. riddleyi* in the neighborhood.

The bulging mass of base fronds is very characteristic. It is formed by many dead, old base fronds enclosed in two new green ones. Mostly these fronds are not rounded, but have an elliptical upper part. When the tree branch is not too thick, it is totally enclosed by the base fronds. As a matter of interest, the illustration given by König (Müller, 1785), who was the first to describe *Acrostichum coronarium* in his letter to Müller, shows a fertile frond of *P. coronarium* and a characteristic base frond of *P. riddleyi*. This illustration is the type of *P. coronarium*, but the base frond must be excluded from the protologue.

We observed the frequent association of *P. riddleyi* with *Lecanopteris*, also reported by Ridley (1908). We collected *P. riddleyi* growing together with *L. crustacea* Copel. The Staghorn Fern has colonies of ants in its base fronds, whereas *Lecanopteris* has them in its thickened rhizome.

Platycerium coronarium also is a host for ants, but it is never associated with *Lecanopteris*. Other epiphytes were not found growing with *Platycerium*.

Oldeman (in Hallé et al, 1978, p. 332) proposed a method for describing the structure of forests by means of a profile diagram. Of great importance is the distinction between trees of the future, present and past. One of the characters used is the presence of epiphytes. Trees of the present have some epiphytes, whereas trees of the past are overgrown by numerous epiphytes. We do not think that *Platycerium* species are an indicator of trees of the past, although, as said before, in the case of *P. riddleyi* they may occur in great quantity on a single vigorous tree and are almost the only epiphytes present, except for *Lecanopteris*.

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REVIEW

✓ **"FERNS AND FERN ALLIES OF GUATEMALA, PART II. POLY-PODIACEAE,"** by Robert G. Stolze, Fieldiana, Botany n.s. 6: i-x, 1-522. 1981.—This is the second of three parts of Stolze's monumental and indispensable work on Central American ferns. (The first part, containing the Ophioglossaceae, Marattiaceae, Osmundaceae, Schizaeaceae, Gleicheniaceae, Hymenophyllaceae, Plagiogyriaceae, Dicksoniaceae, and Cyatheaceae, was reviewed in Amer. Fern J. 67:94. 1977.) The present part matches the format and quality in both text and illustrations (all genera and some species are illustrated) of the earlier part and covers the remainder of the ferns, which are all placed in the Polypodiaceae *sensu latissimo*, alphabetically from *Acrostichum* to *Woodwardia*. Although this arrangement is handy for finding the 67 genera and over 500 species and infraspecific taxa treated in the volume, it does not group related species or genera together, which can be a disadvantage when browsing through the volume while making identifications. However, the keys are ample and well constructed, and so will surely be used for this purpose. The genera are construed broadly, especially *Polypodium*, but that is no disadvantage to the user, and the correct names in the segregate genera are given in the synonymies. The species treatments each include a brief synonymy, habitat and range statements, an original description, and often copious notes. Of special value are Stolze's comments on unresolved taxonomic difficulties which point students of ferns toward areas of fruitful research. Dubious and excluded species are accounted for. Presumably an index will conclude the third part, and that will add greatly to the utility of all the parts.—D.B.L.